

CLAIMS

What is claimed is:

1. A transmission assembly comprising;
 - a transmission having a member movable about a pivot between a plurality of gear positions;
 - a shift lever operatively connected to said pivot for manipulating said member, said shift lever having a first center of mass at a first location relative to said pivot; and
 - a counterbalance operatively connected to said shift lever and having a second center of mass at a second location relative to said pivot different than said first location, producing a total center of mass for said shift lever located between said first location and said second location.
2. The transmission assembly of Claim 1 wherein said first location comprises a first horizontal location and a first vertical location and said second location comprises a second horizontal location and a second vertical location wherein said total center of mass is located between said first horizontal location and said second horizontal location.
3. The transmission assembly of Claim 2 wherein said total center of mass is horizontally located closer to said pivot than said first horizontal location.
4. The transmission assembly of Claim 1 wherein said first location comprises a first horizontal location and a first vertical location and said second location comprises a second horizontal location and a second vertical location wherein said total center of mass is located between said first vertical location and said second vertical location.
5. The transmission assembly of Claim 4 wherein said total center of mass is vertically located closer to said pivot than said first vertical location.

- 10054829 011702
6. The transmission assembly of Claim 1 wherein said first location comprises a first horizontal location and a first vertical location and said second location comprises a second horizontal location and a second vertical location wherein said total center of mass is located between said first vertical location and said second vertical location and between said first horizontal location and said second horizontal location.
 7. The transmission assembly of Claim 1 wherein said counterbalance comprises an isolator including a counterbalance mass and a resilient connection between said counterbalance mass and said shift lever reducing vibration of said shift lever during vehicle operation.
 8. The transmission assembly of Claim 1 including a housing supporting said pivot wherein said counterbalance is located at least partially outside of said housing.
 9. The transmission assembly of Claim 1 including a housing supporting said pivot wherein said pivot is located at least partially inside of said housing.
 10. The transmission assembly of Claim 1 wherein said first center of mass generates a first moment urging said member in a first direction out of one of said gear positions and said second center of mass generates a second moment in a second direction opposite said first direction to maintain said member in a desired gear position.
 11. The transmission assembly of Claim 10 wherein a predetermined resistance level maintains said member in said desired gear position and said first moment is greater than said predetermined resistance level and the sum of said first and second moment is less than said predetermined resistance level.

12. A transmission assembly comprising;

a transmission having a member movable about a pivot between a plurality of gear positions; and

a shift lever operatively connected to said pivot for manipulating said member, said shift lever having an unbent state with a first center of mass at a first location relative to said pivot, and shift lever having a bent state with at least one bend having a second center of mass at a second location relative to said pivot different than said first location, producing a total center of mass for said shift lever located between said first location and said second location wherein said first center of mass generates a first moment urging said member in a first direction out of one of said gear positions and said second center of mass generates a second moment in a second direction generally opposite said first direction to maintain said member in a desired gear position and the sum of said first moment and said second moment is less than said predetermined resistance level.

13. The transmission assembly of claim 12 wherein said shift lever comprises a first horizontal portion extending on one side of said pivot and a second horizontal portion extending on the other side of said pivot wherein said second portion comprises said at least one bend.

14. The transmission assembly of claim 13 wherein said at least one bend comprises a plurality of bends.

15. A method of manufacturing a shift lever comprising the steps of:
- a) determining a location of a center of mass of a shift lever relative to a pivot;
 - b) determining a desired location of the center of mass;
 - c) providing a bend on at least one portion of the shift lever to move the center of mass to the desired location; and
 - d) moving the location of the center of mass closer to the pivot.
16. The method of manufacturing the shift lever of Claim 15 wherein step b) comprises a plurality of bends in the shift lever.
17. The method of manufacturing the shift lever of Claim 15 including the step of providing a bend on a shift lever around a transmission component.
18. The method of manufacturing the shift lever of Claim 15 including the step of operatively connecting the shift lever to a transmission.
19. The method of manufacturing the shift lever of Claim 15 wherein moving the location of the center of mass is vertical.
20. The method of manufacturing the shift lever of Claim 19 wherein moving the location of the center of mass is horizontal.